

BINKERD ENVIRONMENTAL

664 HILLS POINT ROAD • CHARLOTTE, VERMONT 05445 • (802) 425-4939 FAX (802) 425-5939

Wednesday, September 23, 1998

Mr. Chuck Schwer, Supervisor
Sites Management Section
Waste Management Division
103 South Main Street
Waterbury, VT 05671-0404

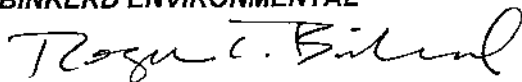
Dear Mr. Schwer:

Subject: Rice Lumber Company, SMS #97-2320

Enclosed is a completed environmental site assessment report in accord with your letter to Rice Lumber Company dated 28 April 1998.

If you have any questions please contact me or Mr. Mike Longstreet at Rice Lumber, (802) 985-3339.

Sincerely,
BINKERD ENVIRONMENTAL



Roger C. Binkerd, P.E.
President

Enclosure (1)
CC: Mike Longstreet, Rice Lumber Company

WASTE MANAGEMENT
DIVISION
SEP 24 10 30 AM '98

BINKERD ENVIRONMENTAL

664 HILLS POINT ROAD • CHARLOTTE, VERMONT 05445 • (802) 425-4939 FAX (802) 425-5939

**Environmental Site
Assessment
Related to UST Closure
at
Rice Lumber Company, Inc.
Route 7, Shelburne, VT
SMS Site #97-2320**

SEP 24 10 30 AM '98

Prepared for:
Rice Lumber Company, Inc.
2035 Shelburne Road, Route 7
Shelburne, VT 05482

Prepared by:
BINKERD ENVIRONMENTAL
664 Hills Point Road
Charlotte, VT 05445
(802) 425 - 4939

BINKERD ENVIRONMENTAL - Project Number 97008

September 1998

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SUMMARY

On 8 December 1997 *BINKERD ENVIRONMENTAL* conducted a closure inspection of two underground storage tanks (UST's) at the Rice Lumber Company, Inc. facility in Shelburne, Vermont. Two tanks were removed from the subsurface: Tank #1 a 10,000-gallon single walled steel tank used to store gasoline; and, Tank #2 a 1,000-gallon single walled steel tank used to store diesel fuel.

After review of the closure report, the Sites Management Section (SMS) of the Vermont Agency of Natural Resources, Waste Management Division determined that "the limits of soil contamination were defined." However, the SMS determined that "additional work is necessary at the site in order to determine the severity of the contamination present" (SMS, 28 April 1998).

A site history has been completed by searching Shelburne Town land use records and by conducting interviews of personnel at the Rice Lumber Company. A search for sensitive receptors was completed and documented. Air in basements of a nearby house and the Rice Lumber Company store were screened with a PID. Four groundwater monitor wells were installed and surveyed to a common elevation. With the use of these monitoring wells groundwater elevations were measured to determine groundwater flow direction. All four monitoring wells were sampled for groundwater quality (BTEX and MTBE). Finally, a water sample was taken from a sump in the basement of the nearby store and office building.

At the Rice Lumber Company site the only contaminate measured higher than the Vermont Groundwater Enforcement Standard was benzene at 16 ug/l. This sample was obtained from MW-3 which was about 2 feet from the excavation and between the excavation and the adjacent garage to the east. The garage is built on a slab. Since this monitoring well is up gradient mounding of water in the excavation may have resulted in this higher concentration. The other explanation is that this well is so close to the pumps and abandoned fill pipes that surface spills may have contributed to observed levels of BTEX. The down gradient well, MW-4, had MBTE at 24 ug/l; benzene was not detected in MW-4. This result is consistent with the groundwater flow map and the low level of contamination observed during the closure inspection.

There does not appear to be a demonstrated risk to human health or the environment. This conclusion is based on the low level of contamination observed in monitoring wells on site and the lack of a viable pathway for exposure to humans or the environment. Drinking water is obtained from a municipal water supply and there are no on site drinking water wells and no drinking water wells on adjacent properties. Air in the basements of the house to the east and office building to the south had no measurable levels on contamination as indicated by PID readings.

There does not appear to be any need for remediation due to the low level of contamination on site and the lack of a demonstrated risk to human health or the environment. Levels of BETX compounds in the subsurface near the removed UST's should continue to degrade due to actions of soil bacteria.

1. INTRODUCTION

This report was prepared by **BINKERD ENVIRONMENTAL** for the Rice Lumber Company. The principal representative for the Rice Lumber Company on environmental issues for this project is Mr. Mike Longstreet.

On 8 December 1997 **BINKERD ENVIRONMENTAL** conducted a closure inspection of two underground storage tanks (UST's) at the Rice Lumber Company, Inc. facility in Shelburne, Vermont. Mr. Roger C. Binkerd, P.E. was the on-site inspector for **BINKERD ENVIRONMENTAL**. T. L. Boise Excavating, Inc. excavated, cleaned and removed the tanks.

Two tanks were removed from the subsurface:

- Tank #1 - 10,000-gallon single walled steel tank used to store gasoline; and,
- Tank #2 - 1,000-gallon single walled steel tank used to store diesel fuel.

These two UST's were located end to end in a common tank pit located on the north side of the entrance way to the Rice Lumber Company store and lumber yard in Shelburne, Vermont. These tanks were located about 175 feet west of the centerline of Route 7.

Upon removal both tanks were found to be in good to excellent condition. No rust, pitting, scaling or holes were identified on either tank. All associated piping was in good to excellent condition. Both tanks were reported by Mr. Longstreet to be about eighteen years old. The large 10,000 gallon gasoline tank was located partially below the water table. Metal straps that surrounded the tank were connected to a concrete pad to hold the tank down. Once these straps were broken the nearly empty tank floated due to water in the pit.

Eighteen soil samples were collected for on-site screening with a photoionization detector (PID, HNU Model DL 101). Due to water in the pit, a soil sample below the removed 10,000 gallon tank could not be obtained. There was no free product on top of the water in the pit.

T. L. Boise personnel returned the soil in the pile to the pit starting with the least contaminated soil. Clean fill was placed on top.

After review of the closure report, the Sites Management Section (SMS) of the Vermont Agency of Natural Resources, Waste Management Division determined that **"the limits of soil contamination were defined."** However, the SMS determined that "additional work is necessary at the site in order to determine the severity of the contamination present" (SMS, 28 April 1998). The SMS requested that Rice Lumber Company:

1. Determine if the airspace beneath the site buildings have been impacted by the release using a PID.
2. Determine the degree and extent of contamination, if any, to groundwater.
3. Perform an assessment of the site to determine the potential for sensitive receptors to be impacted by the contamination.
4. Determine the need for a long term treatment and/or monitoring plan which addresses the contamination present at the site.
5. Submit to the SMS a summary report which outlines the work performed, as well as provides conclusions and recommendations. Included should be detailed well logs, analytical data, a detailed site map showing the location of any potential sensitive receptors, an area map, and a groundwater contour map.

On 30 April 1998, the SMS was notified of the Rice Lumber Company's decision to participate in the expressway program and submitted a "Site Investigation Expressway Notification" form (letter, 30 April 1998).

This report documents the results of the environmental site assessment conducted to satisfy the above requests. A site history has been completed by searching Shelburne Town land use records and by conducting interviews of personnel at the Rice Lumber Company. A search for sensitive receptors was completed and documented. Air in basements of a nearby house and the Rice Lumber Company store were screened with a PID. Four groundwater monitor wells were installed and surveyed to a common elevation. With the use of these

monitoring wells groundwater elevations were measured to determine groundwater flow direction. All four monitoring wells were sampled for groundwater quality (BTEX and MTBE). Finally, a water sample was taken from a sump in the basement of the nearby store and office building.

2.0 SITE BACKGROUND

2.1 Site Location

The Rice Lumber Company property and place of business can be accessed by existing Interstate 189 and driving 2.5 miles south on Route 7 (Figure 1). The Rice Lumber Company has a sign along the right hand side of Route 7. Figure 5 is a photograph of the entrance to Rice Lumber Company looking from the east side of Route 7 toward the west - northwest.

2.2 General Site Description

The Rice Lumber Company is located in a commercially zoned area of Shelburne, Vermont and is surrounded by vacant lots, business and residences. Figure 2 is a 400 percent enlargement of the U.S. Geological Survey map showing topographic features. Ground surface elevations are depicted in Figure 2. The contour interval on this map is 20 feet. As indicated by the contours the site is generally level with a slight rise in elevation east to west. West of the site is a hill which rises 60 feet in elevation from about 200 feet mean sea level (msl) to about 260 feet msl.

Key buildings at Rice Lumber Company are located on this map. A house is located on each side of the entrance to the store and office building. The occupants of these houses are also owners of the Rice Lumber Company. Numerous buildings are located on the property for the storage of wood and building materials. All of these buildings (except the store and two houses) are either built on slabs or are sheds with dirt floors at ground level. Drinking water is supplied by the Town of Shelburne.

Figure 3 is a copy of the property map for the Town of Shelburne. The former location of the UST's are about 175 west of the centerline of Route 7 as indicated in this figure.

To the north of Rice Lumber Company is The Teddy Bear Common. The Teddy Bear Common is a listed site (#972150) due to the presence of chlorinated solvents in the soils.

To the east of the Rice Lumber Company are two houses occupied by two families that also own the Rice Lumber Company. These houses are along Route 7 as indicated in Figure 2. One house (south of the entrance to the store) is located on property identified as 28-50-5

on Figure 3 and is owned by Rice Lumber Company. The other house is on property identified as 28-50-4 and is on the same partial of property as the store, office building and numerous sheds.

To the south of the Rice Lumber Company is undeveloped property owned by Rice Realty.

The land west of the location of the former UST's extends from the Rice Lumber Company to land owned by Action Associates. Both pieces of property are not developed. Further to the west are railroad tracks.

2.3 Site History

2.3.1 Ownership History

The site history was documented by interviews with Mr. Mike Longstreet, land records title search at Shelburne Town Hall, and site visits. The recorded land title records were searched from the present owners back to 1935.

Table 1. Recorded Land Title Records						
Property Address: Rice Lumber Company, Inc., 2035 Shelburne Road						
Records Located at: Shelburne Town Hall						
Search Conducted by: Roger C. Binkerd						
Date of Search: 5 August 1998						
Book	Pages	Grantor	Grantee	Date	Notes	
62	198	Dennison D. & Marion H. Rice	Rice Lumber Company, Inc.	2/20/78		
36	150	Dudley N. & Leda A. Rice	Dennison D. & Marion H. Rice	4/11/55		
22	478	Frank L. Eddy	Dudley N. & Leda A. Rice	11/27/35	89 Acres +- house & barns	

In 1935 the property where the Rice Lumber Company is located was part of a much larger piece of property and was described as a farm.

2.3.2 Manufacturing History

The property occupied by the Rice Lumber Company was never used for manufacturing purposes.

2.4 Previous Site Investigations

Previous site investigations were conducted by ***BINKERD ENVIRONMENTAL*** on 8 December 1998 related to the removal and closure of the two gasoline underground storage tanks that are the focus of this report. A complete copy of the ***BINKERD ENVIRONMENTAL*** closure report is in Appendix A.

3.0 REGIONAL ENVIRONMENTAL SETTING

3.1 Discussion of Site Surficial Geology

According to the "Soil Survey of Chittenden County, Vermont, 1974" the soils covering the entire site of the Rice Lumber Company property are "BIA" Belgrade and Eldridge soils, 0 to 3 percent slopes, Figure 4. On page 18 of the soil survey report it states that in a few areas mapped at lower elevations, the material underlying the sandy material is clay instead of very fine sandy loam and silt loam. This is the case at Rice Lumber Company site where silt and clay were encountered close to the surface. Top soils appear to have been substantially removed in the areas of the buildings and sheds. The location of the removed UST's is in the main parking lot reserved for customers.

3.2 Discussion of Site Hydrogeology

The primary aquifer of concern associated with the Rice Lumber Company property is the unconfined surficial aquifer. Groundwater flow in the surficial aquifer is controlled, among other things, by the physical characteristics of the aquifer (material type and porosity, etc.), the thickness, areal extent, and configuration of the aquifer, by the amount and type of recharge to the aquifer, and by the presence of areas where discharge can occur. In shallow water table aquifers, the surficial topography can also be a significant controlling feature in groundwater flow.

The two major physical characteristics of an aquifer that affect groundwater flow are the type of soil materials (affecting hydraulic conductivity) and the porosity of soil materials (affecting groundwater velocity). Hydraulic conductivity describes the ability of the aquifer to transmit fluid and is expressed in units of length/time. The presence of heterogeneities within the aquifer such as bedding planes or clay layers significantly affect groundwater flow by creating either preferential pathways or barriers to flow. The groundwater flow velocity is the actual velocity of the groundwater flowing through the aquifer. In a shallow water table (unconfined) aquifer such as at the Rice Lumber Company, the velocity is affected by the gradient (the amount of dip) of the water table surface and by the porosity.

To determine the direction of groundwater flow in a shallow unconfined aquifer, the elevation

of the groundwater levels must be measured in shallow wells. These measurements are located on a map, and from them, the topography of the water table is estimated and water table contours generated. Water table contours are imaginary lines connecting equal water elevations that show the estimated topography of the water table. The direction of groundwater flow is then estimated from the map as perpendicular to the water table contours. Groundwater movement in a shallow unconfined aquifer is from high hydraulic head (the water table elevation in an unconfined aquifer) to low hydraulic head.

Water table and groundwater flow direction maps were generated for the Rice Lumber Company property from four shallow monitoring wells installed as part of this investigation. These monitor wells were installed on 27 May 1998 by Twin-State Environmental Corporation. The well logs are included in Appendix B. A photograph depicting the locations of the monitoring wells are in Figure 6.

To construct these maps, the top of all well casings were measured and referenced to a common elevation. The bench mark used in this study was the top of concrete on the porch entrance to the store and offices. This elevation was assigned 100.00 feet. Table 2 list the elevation of the top of the PVC monitor wells. Monitor wells are located to form triangles from which gradients in water surface elevations are most apparent.

Groundwater elevations were measured on two dates as indicated in Table 2. From the first set of groundwater elevation measurements it appeared that the groundwater flow direction was toward the west/southwest, toward the store and office building. Based on these measurements the sump water in the basement of the store was sampled and analyzed. No BTEX compounds were found in this sample. A second set of groundwater elevations were measured on 5 August 1998 after a period of time without rain. Groundwater elevation in MW-1 which was relatively low during June was now consistent with groundwater elevation in MW-2. It is possible that groundwater in MW-1 had not fully stabilized in June even though groundwater measurements were measured about a week after installation. Based on elevations measured in August ground water flow is toward the west; not toward the store and office building, but toward the sheds and vacant land, Figure 7.

Table 2. Groundwater monitor well characteristics and groundwater elevations.

Well ID	Elevation of top of PVC, feet, relative to local bench mark at 100.00 feet	Depth below ground surface, feet	6/2/98 Groundwater Elevations	8/5/98 Groundwater Elevations
MW-1	98.83	12	94.14	96.25
MW-2	97.91	10	96.80	96.35
MW-3	98.17	10	97.57	97.29
MW-4	98.28	11.5	95.73	95.48

4.0 CONTAMINATION REGIME

4.1 Contaminants of Concern

The primary contaminants of concern (COC) at the Rice Lumber Company are benzene, toluene, ethylbenzene, total xylenes (collectively referred to as BTEX). These COC fall into the general category of aromatic hydrocarbons.

4.2 Contaminant Sources

The possible sources of gasoline contamination in the soils and groundwater are the two underground storage tanks, associated piping to fill the tanks, pipes to the gas pumps, and surface spills related to filling the tanks and filling vehicles at the pumps.

It is unlikely that the tanks leaked at all during the eighteen years of service. The tanks were found to be in excellent condition; no leaks from the tanks were observed.

Small spills that accumulated over time are most likely responsible for the contaminated soil observed near the gasoline UST during the closure by **BINKERD ENVIRONMENTAL**.

5.0 FIELD INVESTIGATION RESULTS

5.1 Subsurface (Groundwater and Soil)

The subsurface soils in the vicinity of the removed gasoline tanks are described by **BINKERD ENVIRONMENTAL** (10 December 1998).

Eighteen soil samples were collected for on-site screening with a photoionization detector (HNU Model DL 101). These eighteen samples were placed in Ziploc plastic bags and brought inside a heated trailer on site where they were warmed to room temperature. The results of the field screening are listed below (ppm, parts per million). All samples were a composite of soil obtained from several locations along the side of the pile or the side wall of the pit. The side wall samples were native silty soils. The soil pile consisted of mainly sand and gravel.

<u>Location</u>	<u>PID, ppm</u>
Pile, north side	125 & 165
Pile, east side	36 & 57
Pile, south side	55 & 52
Pile, west side	110 & 140
Pit, north side wall	4
Pit, east side wall	2.5
Pit, south side wall	2.6
Pit, west side wall	8.3
Diesel pit, east side wall	4
Diesel pit, south side wall	2
Diesel pit, west side wall	10
Diesel pit, bottom	18
Quality control, clean soil in bag	1
Ambient air	0.5

Due to water in the pit, a soil sample below the removed 10,000 gallon tank could not be obtained. There was no free product on top of the water in the pit. Based on the description of soil contamination in the closure report (Appendix A) the Sites Management Section (SMS) determined that the limits of soil contamination were defined (28 April 1998).

Ground water samples were collected by **BINKERD ENVIRONMENTAL** on 4 June 1998 from MW-1,

MW-2, MW-3 and MW-4 and analyzed for BETX (benzene, toluene, ethylbenzene and xylenes) and MTBE (methyl tert-butyl ether). MTBE is a gasoline additive that is usually more mobile (faster moving) in the subsurface environment. Although there is no groundwater enforcement standard for MTBE the Vermont Health Advisory for MTBE is 40 ppb (parts per billion).

BETX compounds were detected in MW-3 as indicated in Table 3. Benzene was detected at 16 ug/l (micrograms per liter; approximately sixteen parts benzene in one billion parts water, ppb). For reference, the Vermont Primary Ground Water Quality Standard, Enforcement Standard, for benzene is 5.0 ug/l. Toluene, ethylbenzene, xylenes, and MTBE were also detected in MW-3. MTBE at 24 ug/l was detected in MW-4. No compounds were detected in MW-1, MW-2 and the groundwater collected from the sump in the store and office building.

Table 3. Results of analytical chemistry, ug/l (micrograms per liter).						
Compound	Groundwater Enforcement Standard	MW1 - 4 June 1998	MW2 - 4 June 1998	MW3 - 4 June 1998	MW4 - 4 June 1998	Sump - 7 July 1998
Benzene	5.0	<0.5	<0.5	16	<0.5	<1
Toluene	2420	<0.5	<0.5	7.0	<0.5	<1
Ethylbenze	680	<0.5	<0.5	6.3	<0.5	<1
m/p xylene	400	<1.0	<1.0	18	<1.0	<2
o xylene	400	<0.5	<0.5	4.0	<0.5	<2
Methyl tert-butyl ether	None	<0.5	<0.5	3.4	24	<2

5.2 Surface Water

Surface water on the site consists of various drainage ditches and culverts which are intermittent. There are no streams, brooks, ponds or standing bodies of water of any kind on the property. Surface drainage is generally toward the northeast. Surface water drains towards Munroe Brook and eventually enters Lake Champlain in Shelburne Bay.

6.0 POTENTIAL RISK AND POTENTIAL RECEPTORS

6.1 Human Health

In general, to have potential risk to human health three factors must be present: there must be a contaminate(s); a pathway(s); and, receptors.

Contaminate: At the Rice Lumber Company site the only contaminate measured higher than the Vermont Groundwater Enforcement Standard was benzene at 16 ug/l. This represents a low level of contamination, which is most likely due to surface spills of gasoline that occurred during routine filling of the UST's, or during the filling of gasoline tanks in vehicles. This sample was obtained from MW-3 which was about 2 feet from the excavation and between the excavation and the adjacent garage to the east. The garage is built on a slab. Figure 6 is a photograph of the site looking from the west to the east toward the garage. The locations of all monitoring wells are depicted in this figure. Since MW-3 is up gradient mounding of water in the excavation may have resulted in this higher concentration. The other explanation is that this well is so close to the pumps and abandoned fill pipes that surface spills may have contributed to observed levels of BTEX. A monitoring well further to the east was not installed since that would have intruded on the lawn of the adjacent house to the east. The down gradient well, MW-4, had MBTE at 24 ug/l. This result is consistent with the groundwater flow map and the low level of contamination observed during the closure inspection.

Pathways: One possible route of exposure is by groundwater transport. The water table is shallow and the groundwater flow is apparently toward the west.

The second possible pathway is via the air. Contamination in the vadose zone (above the water table) of the subsurface could migrate directly to the overlying air or into basements. The nearest basement is in the store and office building to the south southwest. The houses to the east of the site of the removed UST's are upgradient. Since groundwater flows west of the site.

Receptors: The possible receptors are the employees at the Rice Lumber Company and the

residents in the houses to the west.

The chain (contaminate - pathway - receptors) appears broken since a viable pathway does not exist, i.e., there are no receptors downgradient of the site. This break in the chain essentially eliminates the risk to human health.

6.2 Environmental Risk

The environmental risk caused by this contamination is to the unconfined surficial aquifer and soil contamination near the removed UST's. As indicated by the SMS the limits of soil contamination have been defined. Groundwater is impacted at low levels and except for MW-3 (directly adjacent to the excavation) there are no other levels of contaminants above Groundwater Enforcement Standards or Vermont Health Advisory levels. Surface water is not contaminated.

7.0 IDENTIFICATION OF DATA GAPS AND DATA NEEDS

7.1 Contaminate Fate and Transport

Contaminate fate and transport at this site is sufficiently understood that no additional information on fate and transport is necessary. This conclusion is based on the following facts:

- ◆ the UST's did not leak as documented in the closure report;
- ◆ groundwater in MW-3 was the most impacted, but this well is two feet from the edge of the excavation and is not representative of groundwater quality down gradient of the site of the removed UST's. MW-4 is directly down gradient of the site of the removed UST's and groundwater at this location does not indicate levels of contamination above Groundwater Enforcement Standards or Vermont Health Advisory levels.
- ◆ a plausible means of contamination has been presented, i.e., by surface spills during filling the tanks and/or filling cars and trucks at the gas pumps.

7.2 Risk to Human Health and the Environment

There does not appear to be a demonstrated risk to human health or the environment. This conclusion is based on the low level of contamination observed in monitoring wells on site and the lack of a viable pathway for exposure to humans or the environment. Drinking water is obtained from a municipal water supply and there are no on site drinking water wells and no drinking water wells on adjacent properties. Air in the basements of the house to the east and office building to the south had no measurable levels of contamination as indicated by PID readings.

7.3 Remediation and Monitoring

There does not appear to be any need for remediation due to the low level of contamination on site and the lack of a demonstrated risk to human health or the environment. Levels of BETX compounds in the subsurface near the removed UST's should continue to degrade due to actions of soil bacteria.

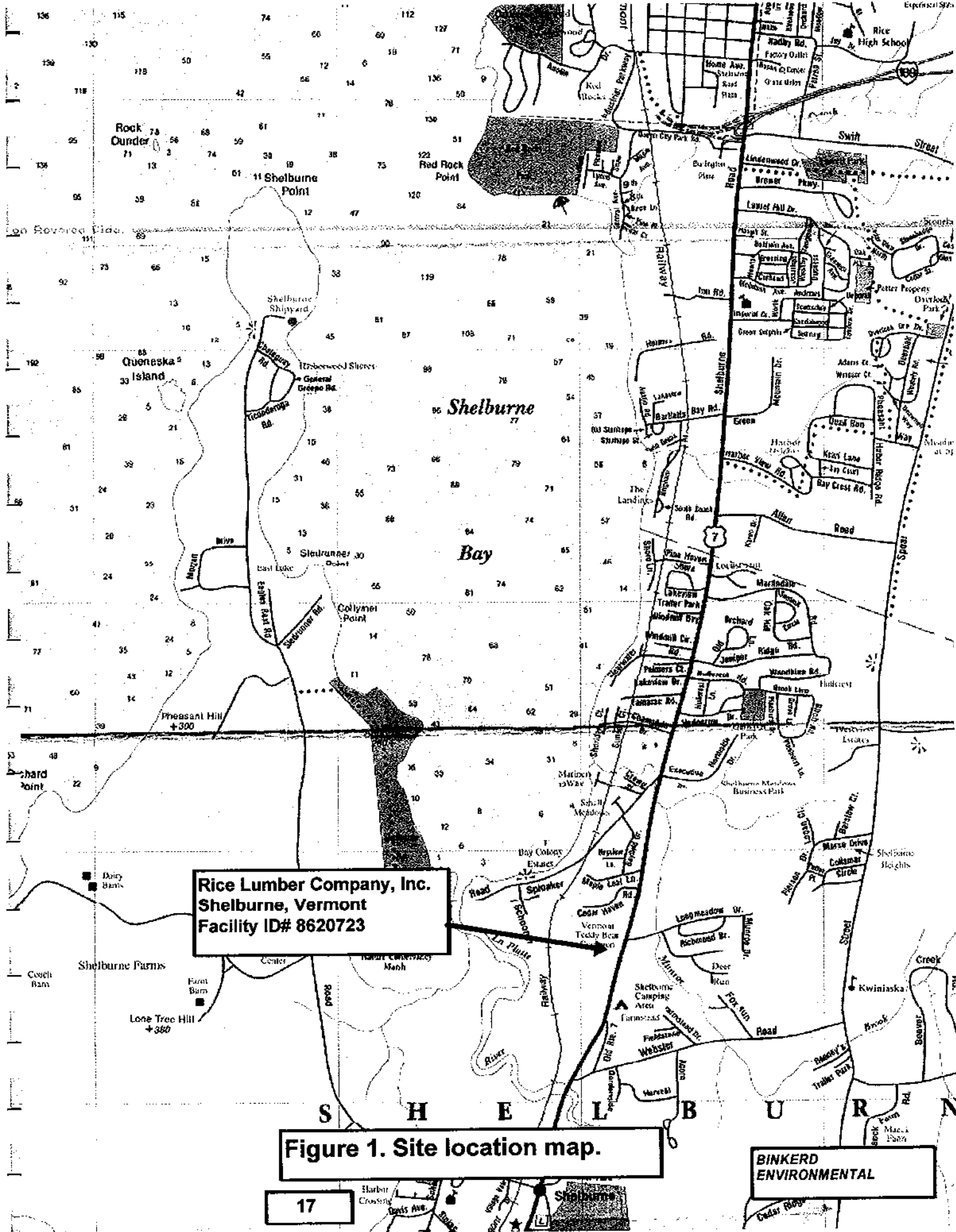
8.0 REFERENCES

BINKERD ENVIRONMENTAL, 10 December 1997. UST closure report.

28 April 1998. Letter from Mr. Chuck Schwer, Supervisor, Sites Management Section, to Mr. Mike Longstreet, The Rice Lumber Company Motor Company Inc.

30 April 1998. Letter from Mr. Roger C. Binkerd, ***BINKERD ENVIRONMENTAL***, to Mr. Chuck Schwer, Supervisor, Sites Management Section.

USDA. 1974. Soil Survey of Chittenden County, Vermont. United States Department of Agriculture, Soil Conservation Service, Issued January 1974.

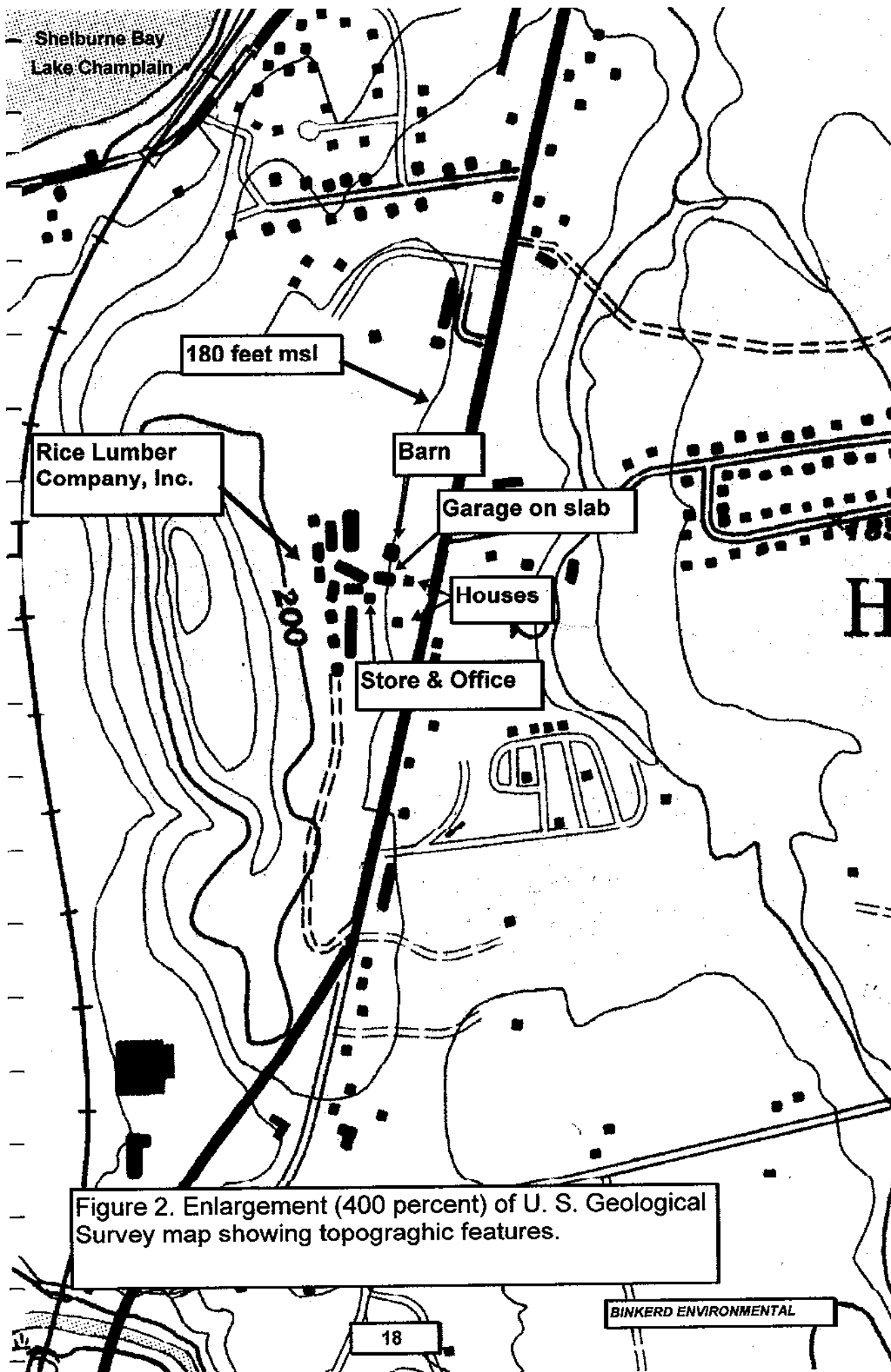


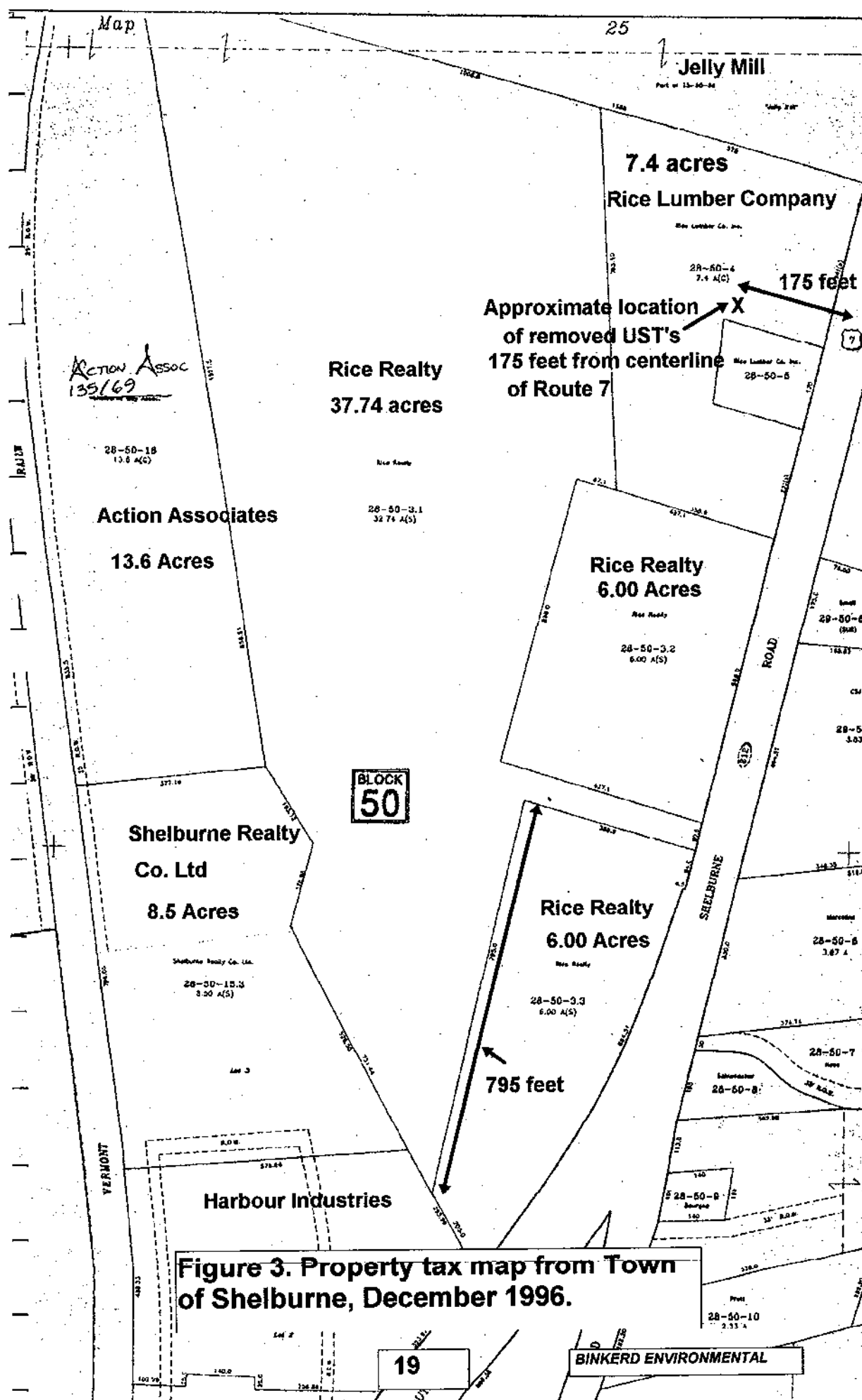
Rice Lumber Company, Inc.
Shelburne, Vermont
Facility ID# 8620723

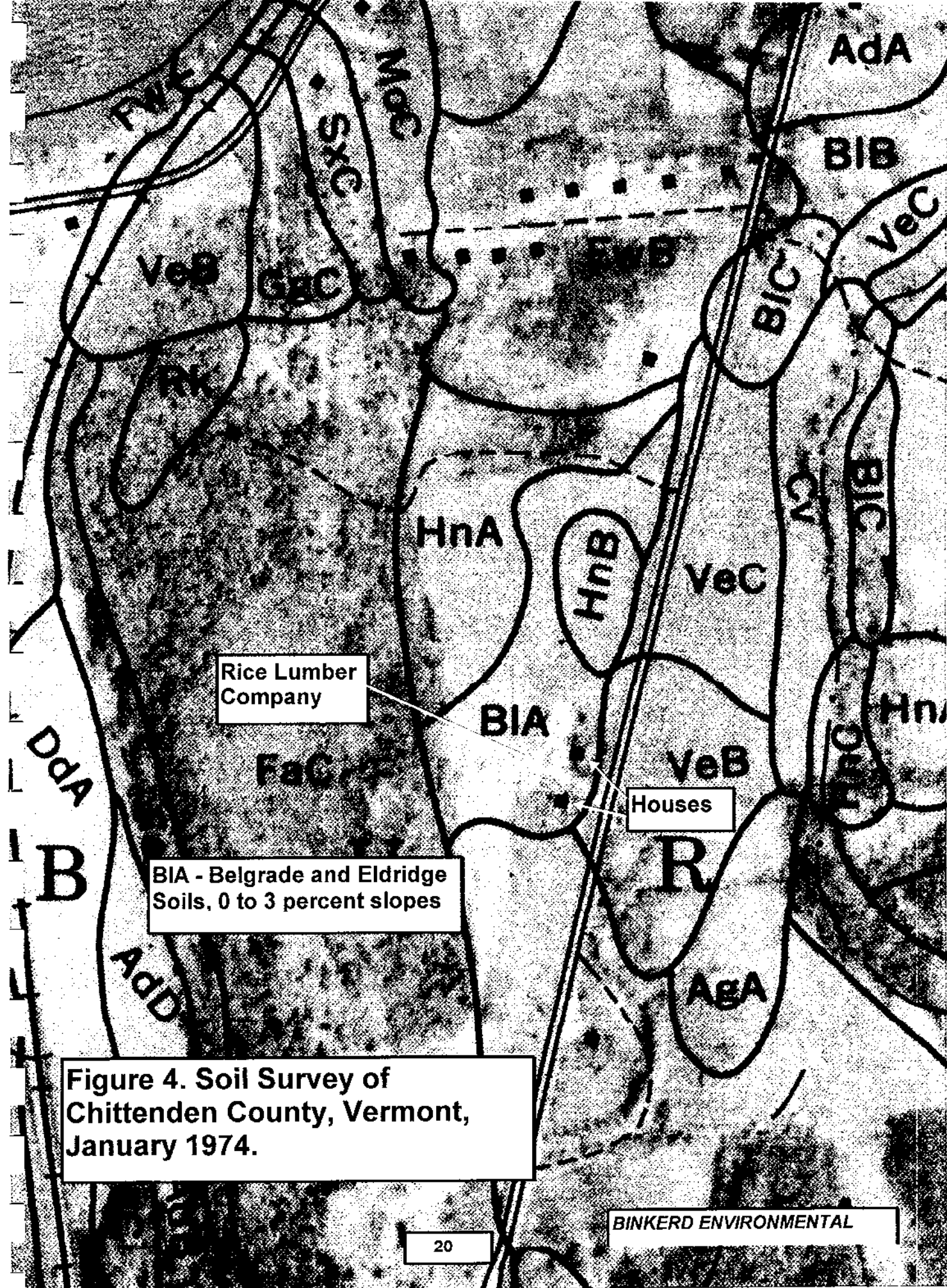
Figure 1. Site location map.

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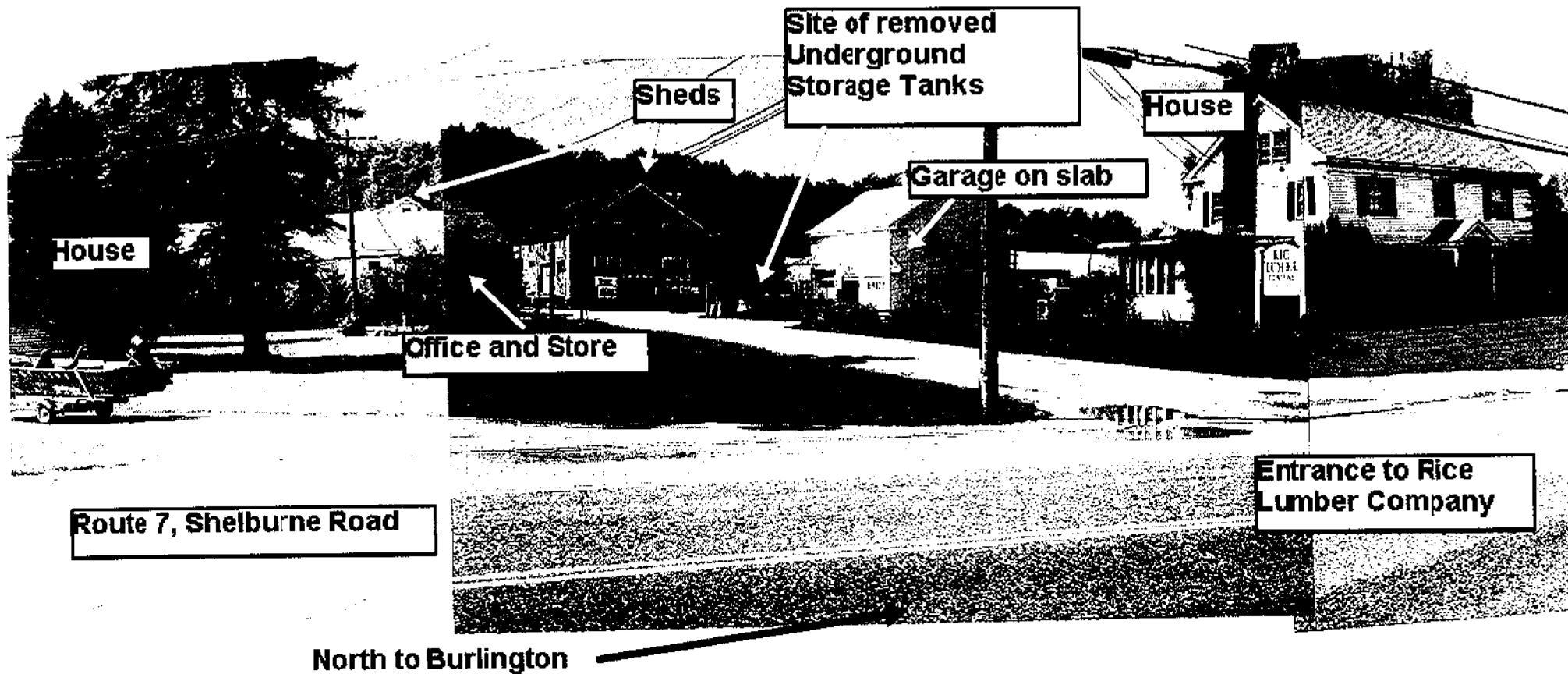


Figure 5. Photograph of Rice Lumber Company looking toward the west from Route 7.

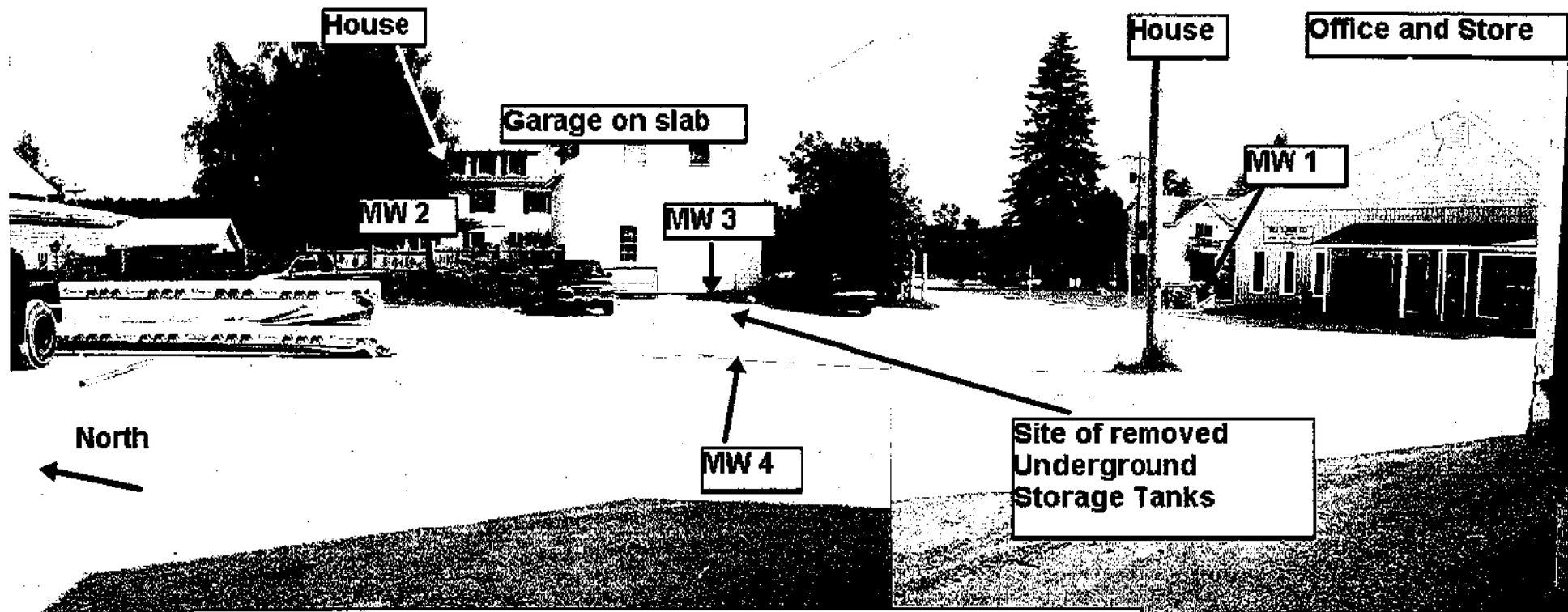
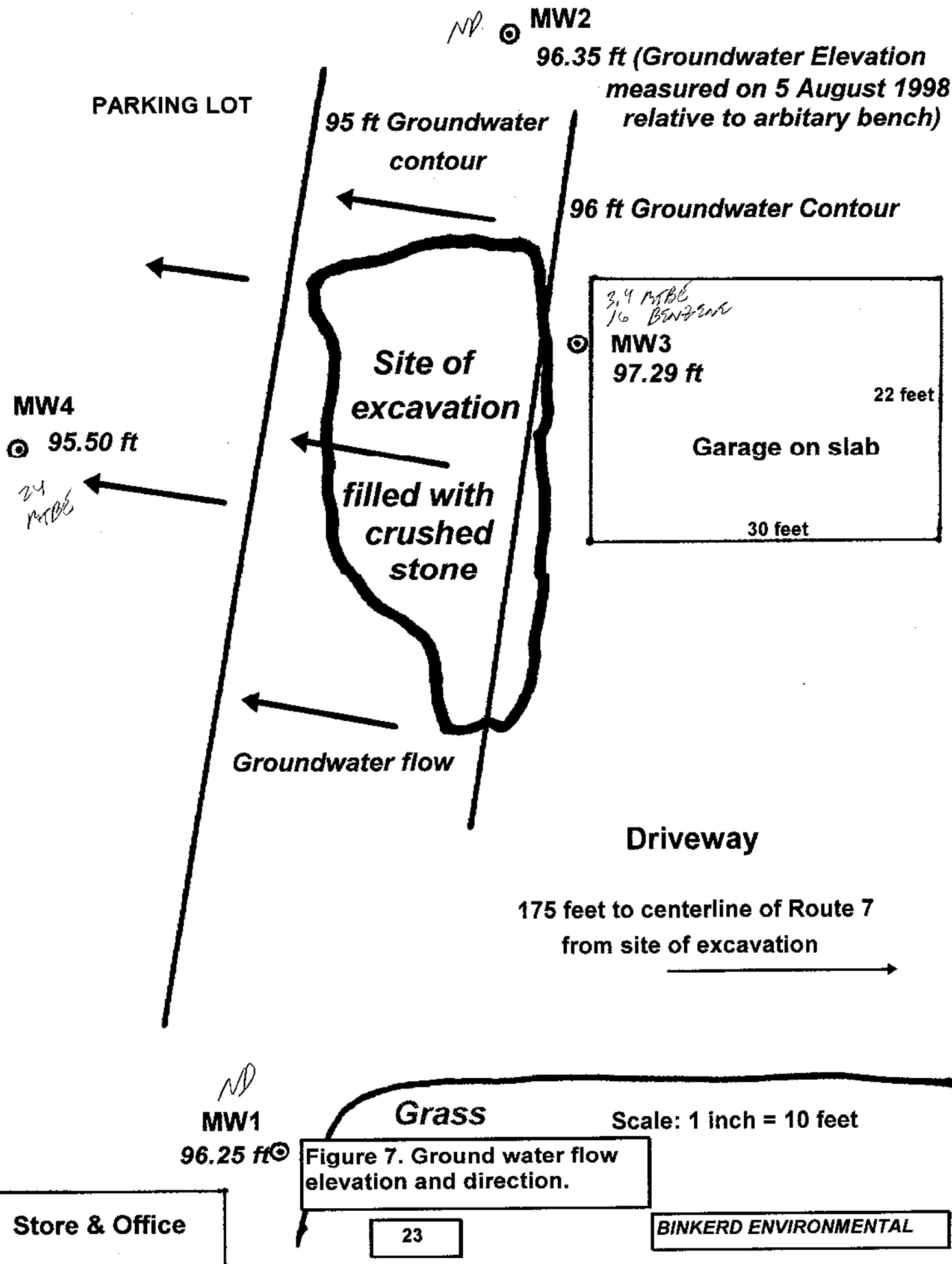


Figure 6. Photograph of Rice Lumber Company looking toward the east depicting the locations of the Monitoring Wells (MW).



APPENDIX A

COPY

10 December 1997

Ms. Susan Thayer
State of Vermont
Department of Environmental Conservation
Waste Management Division
103 South Main Street/West Office
Waterbury, VT 05671-0404

Re: Rice Lumber Company; Facility ID# 8620723

Dear Ms. Thayer:

On 8 December 1997 *BINKERD ENVIRONMENTAL* conducted a closure inspection of two underground storage tanks (UST's) at the Rice Lumber Company, Inc. facility in Shelburne, Vermont. The Rice Lumber Company is located from Interstate 189, by driving south on Route 7 toward Shelburne. Rice Lumber Company is on the right before the bridge that spans the La Platte River, Figure 1.

Mr. Roger C. Binkerd, P.E. was the on-site inspector for *BINKERD ENVIRONMENTAL*. T. L. Boise Excavating, Inc. excavated, cleaned and removed the tanks.

TANK REMOVALS

Two tanks were removed from the subsurface:

- Tank #1 - 10,000-gallon single walled steel tank used to store gasoline; and,
- Tank #2 - 1,000-gallon single walled steel tank used to store diesel fuel.

These two UST's were located end to end in a common tank pit located on the north side of the entrance way to the Rice Lumber Company store and lumber yard in Shelburne, Vermont. A site diagram is included in the Vermont "Underground Storage Tank Permanent Closure Form" that is enclosed. These tanks were located about 160 feet west of Route 7.

Four photographs are enclosed in Figures 2 and 3. Photographs in Figure 2 show the excavated soil pile and the pit. Figure 3 shows the tanks.

Upon removal both tanks were found to be in good to excellent condition. No rust, pitting, scaling or holes were identified on either tank. All associated piping was in good to excellent condition. Both tanks were reported by a Rice Lumber Company representative to be about eighteen years old. The large 10,000 gallon gasoline tank was located partially below the water table. Metal straps surrounded the tank and were connected to a concrete pad to hold the tank down. Once these straps were broken the nearly empty tank floated due to water in the pit.

Liquid from the gasoline and diesel tanks were placed into 55 gallon steel drums. The storage tanks were purged to dryness with air. Holes were cut in the storage tanks and the inside of the tanks were cleaned before transport off site.

The UST's will be replaced with above ground storage facilities. There are no other UST's on this site.

SOIL CONDITION AND SAMPLES

The soil first encountered was about four inches of top soil. The soil below the top soil to a depth of 13 feet was brown, medium-grained sand with some gravel. Groundwater was encountered at about five feet. T. L. Boise excavated the soils that ended up in one large pile, Figure 2.

Eighteen soil samples were collected for on-site screening with a photoionization detector (HNU Model DL 101). These eighteen samples were placed in Ziploc plastic bags and brought inside a heated trailer on site where they were warmed to room temperature. The results of the field screening are listed below and in Figure 2. All samples were a composite of soil obtained from several locations along the side of the pile or the side wall of the pit. The side wall samples were native silty soils. The soil pile consisted of mainly sand and gravel.

<u>Location</u>	<u>PID, ppm</u>
Pile, north side	125 & 165
Pile, east side	36 & 57
Pile, south side	55 & 52
Pile, west side	110 & 140
Pit, north side wall	4
Pit, east side wall	2.5
Pit, south side wall	2.6
Pit, west side wall	8.3
Diesel pit, east side wall	4
Diesel pit, south side wall	2
Diesel pit, west side wall	10
Diesel pit, bottom	18
Quality control, clean soil in bag	1
Ambient air	0.5

Due to water in the pit, a soil sample below the removed 10,000 gallon tank could not be obtained. There was no free product on top of the water in the pit.

As you may recall, I called the Waste Management Division (WMD) shortly after lunch and spoke with you. After I explained the situation and relayed the PID results of the soil in the pile, site options were discussed. The options were (1) to encapsulate the soil pile on site and fill the pit with clean fill or (2) return the least contaminated soil to the pit first, followed by more contaminated soil, and finally place clean fill on the top. Since it was not feasible to remove all contaminated soil from the pit due to the soupy nature of the soils below the water table, choosing the first option would have resulted in two contaminated sites on the property to contend with. The WMD division favored the second option and that is the option that was implemented.

T. L. Boise personnel returned the soil in the pile to the pit starting with the least contaminated soil. Clean fill was placed on top.

POTENTIAL RECEPTORS

The area was surveyed for potential sensitive receptors. The area is serviced by a municipal water system. No private drinking water supply wells are known to exist in the area. The Rice Lumber Company building west of, and adjacent to, the site of the excavation does not have a basement which precludes the accumulation of petroleum vapors.

Please find enclosed the completed "Underground Storage Tank Permanent Closure Form," a site location map, and four photographs.

If you have any questions, please contact me.

Sincerely,
BINKERD ENVIRONMENTAL

Roger C. Binkerd, P.E.
President

cc w/enclosures to Mr. Michael Longstreet, Rice Lumber Company

UNDERGROUND STORAGE TANK PERMANENT CLOSURE FORM

Agency Use Only
 Facility ID# 02-0723
 Date of scheduled activity: 12/9/97
 Facility Shelburne
 Town Shelburne
 DEC Official SP Eval. by _____

Vermont Agency of Natural Resources
 Dept. of Environmental Conservation
 Waste Management Division
 103 South Main Street, West Building
 Waterbury, Vermont 05671-0404
 Telephone: (802) 241-3888

Site assessment company BINKERD
ENVIRONMENTAL
 Site assessor ROGER BINKERD
 Phone Number of company for person (877) 425-4939
 Date of UST closure: 12/8/97
 Date of site assessment 12/8/97

Section A. Facility Information:

Name of facility: RICE COMPANY CO Number of employees: 31
 Street address of facility: 2035 Shelburne Road, Shelburne VT 05482
 Owner of UST(s) to be closed: Jim Carroll Contact (if different than owner): M. K. L. STREET
 Mailing address of owner: 2035 Shelburne Road, Shelburne VT 05482
 Telephone number of owner: 802 985 3339 Contact telephone #: 802 985 3339

Section B. UST Closure Information: (please check one)

Reason for initiating UST closure: ☐ Suspected Leak ☐ Liability ☐ Replacement ☒ Abandoned
 Which Portion of UST is to be closed: ☐ Tanks ☐ Piping ☒ Tanks & Piping

USTs (piping is considered a part of UST system) undergoing permanent closure. Include condition of USTs

UST #	Product	Size (gallons)	Tank age	Tank Condition	Piping age	Piping condition
<u>1</u>	<u>gasoline</u>	<u>10,000</u>	<u>18 years</u>	<u>GOOD TO EXCELLENT</u>	<u>18 years</u>	<u>GOOD TO EXCELLENT</u>
<u>2</u>	<u>diesel</u>	<u>1,000</u>	<u>18 years</u>	<u>GOOD TO EXCELLENT</u>	<u>18 years</u>	<u>GOOD TO EXCELLENT</u>

Which tanks, if any, will be closed in-place: USTs# NA Authorized by: NA Date:
 Disposal/destruction of removed UST(s): Location NEW HAVEN VT Method CUT UP FOR Date: 1-1-
 Amount (gal.) and type of waste generated from USTs: 10 GAL GAS 15 GAL DIESEL
 (tank contents are hazardous wastes unless recovered as usable product)
 Tank cleaning company (must be trained in confined space entry): T. L. BOISE EXCAVATING, INC.
 Certified hazardous waste hauler: NOT DETERMINED Generator ID number: VTP 00000 8121
AS OF 12/8/97

Section C. Initial site characterization:

Work in this section must be completed by a professional environmental consultant or hydrogeologist with experience in environmental sampling for the presence of hazardous materials. A full report from the consultant must accompany this form

PID information:

Make: HVH Model: DL 101 Calibration information (date, time, gas): 12/8/97 850um ISO BUT YLENE
reference
to BINKERD

Excavation information: (some tank pulls require more than one excavation)

Tanks # and Excavation (A, B, C, etc)	MAX Depth (ft)	Excavation size (ft ²)	Peak PID reading	Depth of Peak (ft)	Avg PID reading	Bedrock Depth (ft)	Groundwater encountered? (y/n) and at depth (ft)	Soil type
<u>1</u>	<u>13</u>	<u>20x20</u>	<u>165</u>	<u>3-5</u>	<u>63</u>	<u>UNKNOWN</u>	<u>4' 5'</u>	<u>SAND & GRAVEL S.H</u>
<u>2</u>	<u>7</u>	<u>10x10</u>	<u>18</u>	<u>5</u>	<u>9</u>	<u>UNKNOWN</u>	<u>4' 5'</u>	<u>SAND & GRAVEL R.H</u>

Locate all readings and samples on site diagram

Number of soil samples collected for laboratory analysis? 0 results due date
 Have any soils been polyencapsulated on site? Yes (#yds) PID range above zero No X
 Have any soils been transported off site? Yes list amount (yds): No X
 Location transported to: NA DEC official who approved: NA
 Amount of soils backfilled (yds): 80-100 PID range above zero 36-165
 Have limits of contamination been defined? Yes X No (all walls < 10 ppm) Avg. 4.3 ppm
 Is there any other known contamination on-site? Yes No X Comments: (↑ BOTTOM UNKNOWN)

Free Phase product encountered? Yes thickness No X
 Groundwater encountered? Yes X depth (ft) 5 No
 Are there existing monitoring wells on-site? Yes how many: (locate on site diagram) No X
 Have new monitoring wells been installed? Yes how many: (locate on site diagram) No X
 Have samples been taken from any monitoring wells for lab analysis? Yes results due date No X

Is there a water supply well on site? Yes (check type: shallow rock spring) No X
 How many public water supply wells are located within a 0.5 mile radius? min. distance (ft.): 0
 How many private water supply wells located within a 0.5 mile radius? min distance (ft.): 0

What receptors have been impacted? X soil indoor air X groundwater surface water water supply

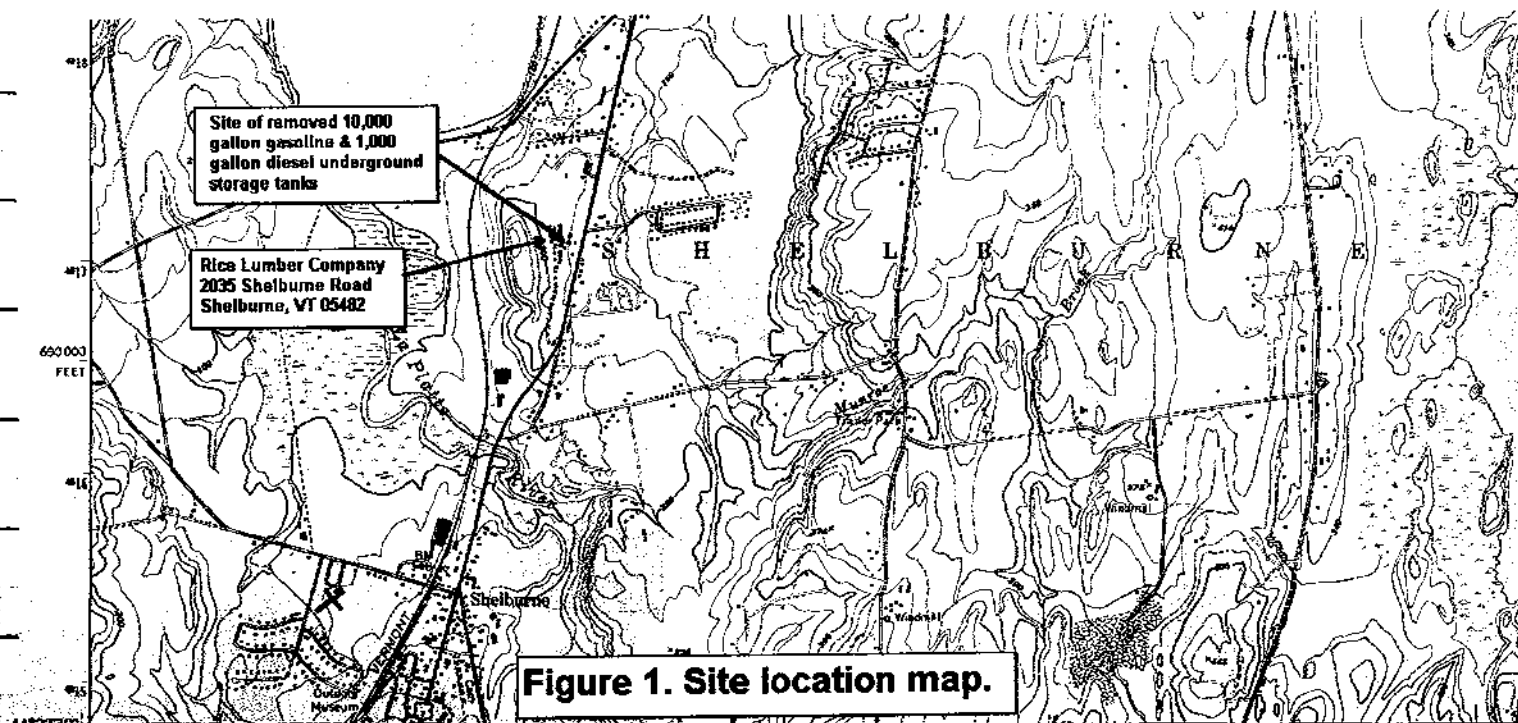


Figure 1. Site location map.

Mapped by the Army Map Service
Published for civil use by the Geological Survey
Control by USGS, USC&GS, and USCE

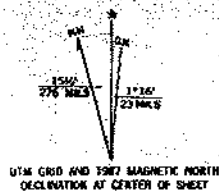
Topography from aerial photographs by multiplex methods
Aerial photographs taken 1947. Field check 1948

Polyconic projection. 1927 North American datum
10,000-foot grid based on Vermont coordinate system
1000-meter Universal Transverse Mercator grid ticks,
zone 18, shown in blue

To place on the predicted North American Datum 1983
move the projection lines 2 meters south and
34 meters west as shown by dashed corner ticks

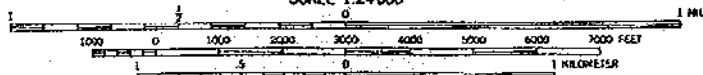
Red tint indicates area in which only landmark
buildings are shown

No distinction is made between barns, dwellings,
commercial, and industrial buildings



There may be private inholdings within the boundaries
of the National or State reservations shown on this map

SCALE 1:24,000



CONTOUR INTERVAL 20 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY
DENVER, COLORADO 80225 OR RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

Revisions 5
the Geologi
taken 1983
Map edited
Purple tint

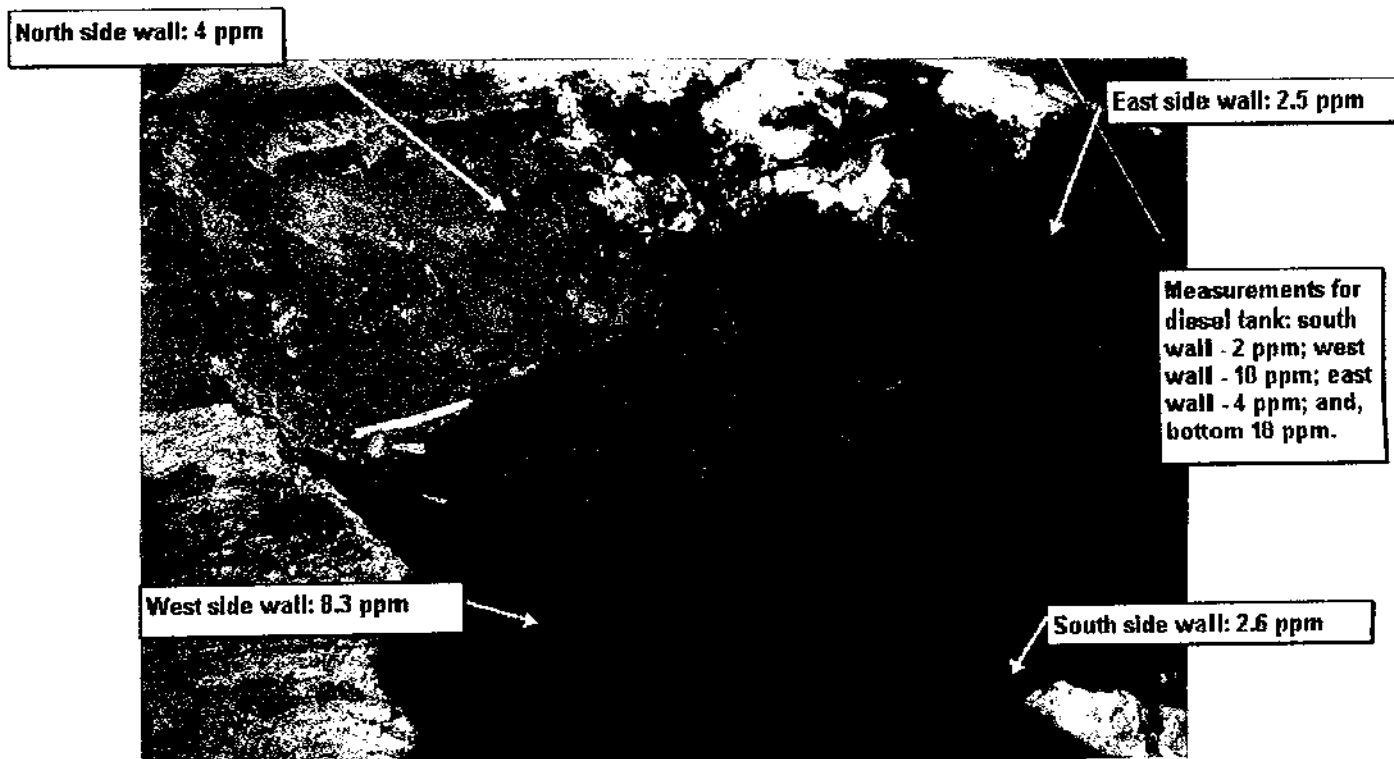
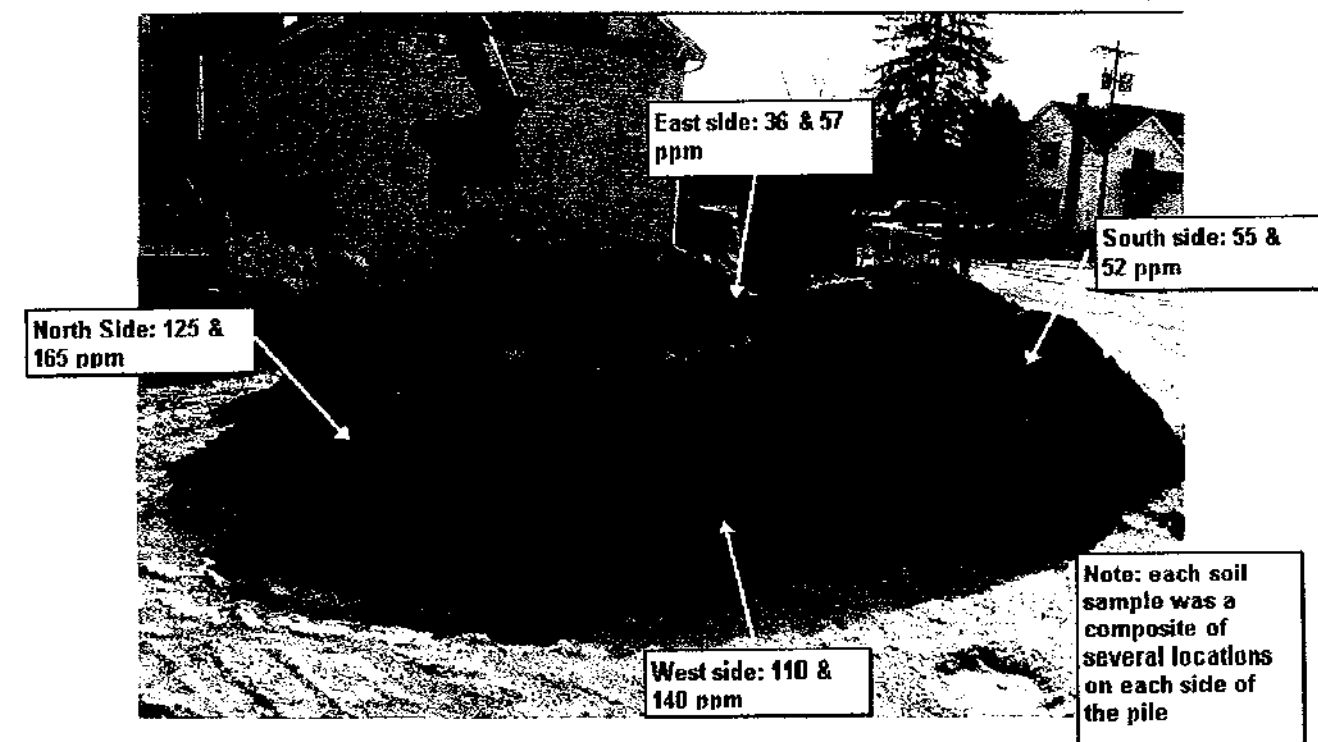
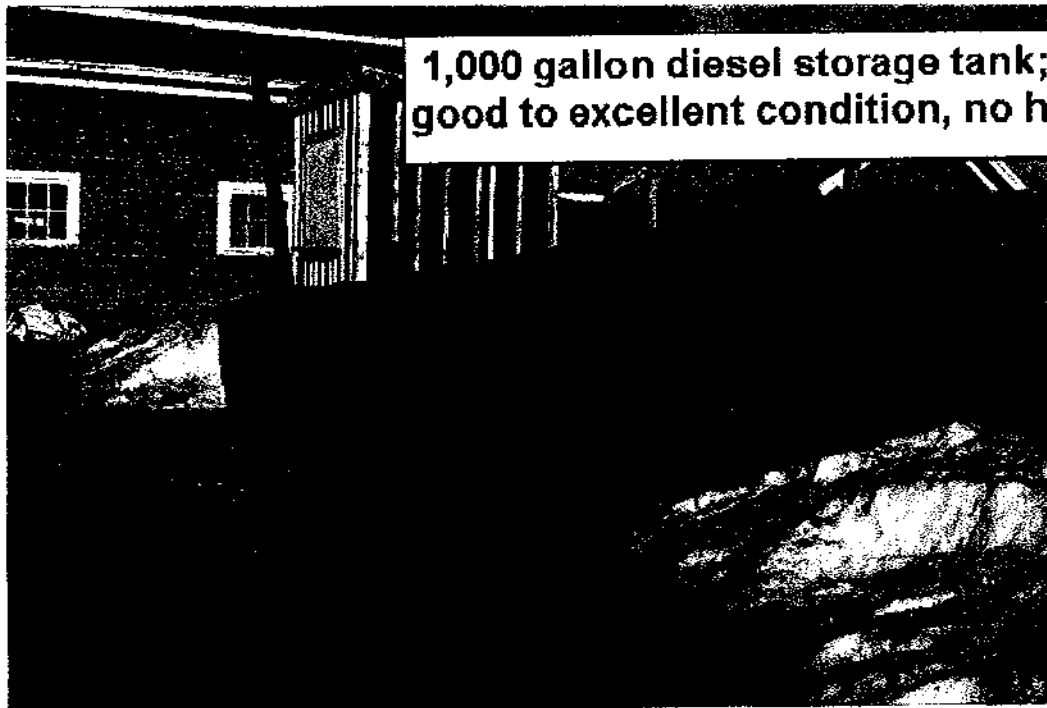


Figure 2. Excavated soils with PID readings and approximate locations of soil samples. All excavated soils returned to hole with clean fill placed on top.

**10,000 gallon gasoline storage tank;
good to excellent condition, no holes**



**1,000 gallon diesel storage tank;
good to excellent condition, no holes**



**Figure 3. Pictures showing condition of
the removed underground storage tanks on
8 December 1997.**

APPENDIX B

SOIL BORINGS AND MONITORING WELL LOGS
INSTALLED - 27 MAY 1998

Method: Borings advanced by GeoProbe, operated by Twin State Environmental Corporation. Continuous soil samples obtained by advancing 4 foot stainless steel sampler with polyethylene liner. Sample brought to surface and contents of the liner examined and measured with a PID. All monitoring wells consist of 5 slot per inch PVC well screen.

Soil Boring 1 (MW-1): Screen interval: 7-12 feet, 5 slot; 0-7 feet riser

0-4 inches - limestone and crushed rock

4-20 inches - sand and gravel mix

20-48 inches - clay

4-7 feet - clay (PID - 4-8 feet - 0.4 ppm)

7-8 feet - clay

8-12 feet - clay

Soil Boring 2 (MW-2): Screen interval: 0-10 feet, 5 slot

0-6 inches: top soil and gravel

6 inches-5 feet: silt with some sand (PID - 0-3 feet - 0.5 ppm)

at 5 feet: perched water, silty (PID - 3-5 feet - 0.5 ppm)

5-7 feet: clay, solid and dry (PID - 5-10 feet - 0.8 ppm)

7-9 feet: moist silt

9-11 feet: clay, solid and dry

Soil Boring 3 (MW-3): Screen interval: 0-10 feet 5 slot

0-1 foot: limestone

1-2 feet: soil

2-4 feet: no recovery

4-8 feet: clay (PID - 5-9 feet - 2.4 ppm)

8-11 feet: clay (PID - 9-11 feet - 1.8 ppm)

Soil Boring 4 (MW-4): Riser: 0-1.5 feet; Screen interval: 1.5 - 11.5 feet

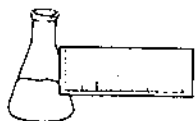
0-4 feet: limestone & gravel, poor recovery
(PID - 0.5 ppm)

4-8 feet: clay (PID - 0.5 ppm)

8-12 feet: clay, some moist (PID - 0.6 ppm)

12-16 feet: clay (PID - 0.5 ppm)

APPENDIX C



ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

REPORT OF LABORATORY ANALYSIS

CLIENT: Binkerd Environmental
PROJECT NAME: Rice
DATE REPORTED: July 13, 1998
DATE SAMPLED: July 7, 1998

PROJECT CODE: BINK1535
REF. #: 123,612

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody record.

Chain of custody indicated sample preservation with HCl.

All samples were prepared and analyzed by requirements outlined in the referenced methods and within the specified holding times.

All instrumentation was calibrated with the appropriate frequency and verified by the requirements outlined in the referenced methods.

Blank contamination was not observed at levels affecting the analytical results.

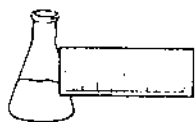
Analytical method precision and accuracy were monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

Individual sample performance was monitored by the addition of surrogate analytes to each sample. All surrogate data was determined to be within Laboratory QA/QC guidelines unless otherwise noted.

Reviewed by,

Harry B. Locker, Ph.D.
Laboratory Director

enclosures



ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

LABORATORY REPORT

EPA METHOD 602 COMPOUNDS BY EPA METHOD 8260

CLIENT: Binkerd Environmental
PROJECT NAME: Rice
REPORT DATE: July 13, 1998
SAMPLER: Roger Binkerd
DATE SAMPLED: July 7, 1998
DATE RECEIVED: July 7, 1998

PROJECT CODE: BINK1535
ANALYSIS DATE: July 13, 1998
STATION: Sump
REF.#: 123,612
TIME SAMPLED: 1400

<u>Parameter</u>	<u>Detection Limit ($\mu\text{g/L}$)</u>	<u>Concentration ($\mu\text{g/L}$)</u>
Benzene	1	ND ¹
Chlorobenzene	1	ND
1,2-Dichlorobenzene	1	ND
1,3-Dichlorobenzene	1	ND
1,4-Dichlorobenzene	1	ND
Ethylbenzene	1	ND
Toluene	1	ND
Xylene	2	ND
MTBE	2	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane:	89.%
Toluene-d8:	99.%
4-Bromofluorobenzene:	100.%

NOTES:

1 None detected

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333

CHAIN-OF-CUSTODY RECORD

LINKERO ENVIRONMENTAL /

27951

Project Name: Site Location:	TRICE	Reporting Address:	664 HILLS RD CHANDLER, VT	Billing Address:	SITTING
Endyne Project Number:	BINK1535	Company:	BINK ENV	Sampler Name:	ROGER BINKER
		Contact Name/Phone #:	ROGER/425 4939	Phone #:	SITTING

[illegible]

TEMP = 77 SS ^{cool}

Relinquished by: Signature <i>RBilal</i>	Received by: Signature <i>Dyanne L. Spring</i>	Date/Time <i>7/7/78 @ 1445</i>
Relinquished by: Signature	Received by: Signature <i>1445</i>	Date/Time

New York State Project: Yes ☐ No ☒

New York State Project: Yes ☐ No ☐

Requested Analyses

Requested Analyses											
1	pH	6	TKN	11	Total Solids	16	Metals (Specify)	21	EPA 624	26	EPA 8270 B/N or Acid
2	Chloride	7	Total P	12	TSS	17	Coliform (Specify)	22	EPA 625 B/N or A	27	EPA 8010/8020
3	Ammonia N	8	Total Diss. P	13	TDS	18	COD	23	EPA 418.1	28	EPA 8080 Pest/PCB
4	Nitrite N	9	BOD ₅	14	Turbidity	19	BTEX	24	EPA 608 Pest/PCB		
5	Nitrate N	10	Alkalinity	15	Conductivity	20	EPA 601/602	25	EPA 8240		
29	TCLP (Specify: volatiles, semi-volatiles, metals, pesticides, herbicides)										
30	Other (Specify):										

Analytical Report

Binkerd Environmental
664 Hills Point Road
Charlotte, VT 05445

Date : 06/18/98
ETR Number : 69431
Project No.: 98000
No. Samples: 4
Arrived : 06/05/98

Attention : Roger Binkerd

Page 1

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020,
Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater.
All results are in mg/l unless otherwise noted.

Lab No./ Method No.	Sample Description/ Parameter	Result
358598	MW-1:06/04/98 @1215(Water) 8021 Halogenated Volatiles	C
358599	MW-2:06/04/98 @1220(Water) 8021 Halogenated Volatiles	C
358600	MW-3:06/04/98 @1225(Water) 8021 Halogenated Volatiles	C
358601	MW-4:06/04/98 @1230(Water) 8021 Halogenated Volatiles	C

Comments/Notes

C = Procedure/analysis completed

< Last Page >

Submitted By :

Kim B. Watson

Aquatec Inc.

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW-1

Lab Name: ITS ENVIRONMENTAL

Contract: 98000

Lab Code: INCHVT

Case No.: 98000

SAS No.:

SDG No.: 69431

Matrix: (soil/water) WATER

Lab Sample ID: 358598

Sample wt/vol: 5.000 (g/mL) ML

Lab File ID: 16JUN981548-I031

Level: (low/med) LOW

Date Received: 06/05/98

% Moisture: not dec. _____

Date Analyzed: 06/17/98

GC Column: DB-VRX ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

1634-04-4-----	Methyl tert-Butyl Ether	0.50	U
71-43-2-----	Benzene	0.50	U
108-88-3-----	Toluene	0.50	U
100-41-4-----	Ethylbenzene	0.50	U
-----	m/p-Xylene	1.0	U
95-47-6-----	o-Xylene	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW-2

Lab Name: ITS ENVIRONMENTAL

Contract: 98000

Lab Code: INCHVT

Case No.: 98000

SAS No.:

SDG No.: 69431

Matrix: (soil/water) WATER

Lab Sample ID: 358599

Sample wt/vol: 5.000 (g/mL) ML

Lab File ID: 16JUN981548-I041

Level: (low/med) LOW

Date Received: 06/05/98

% Moisture: not dec. _____

Date Analyzed: 06/17/98

GC Column: DB-VRX ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

1634-04-4-----Methyl tert-Butyl Ether_____	0.50	U
71-43-2-----Benzene_____	0.50	U
108-88-3-----Toluene_____	0.50	U
100-41-4-----Ethylbenzene_____	0.50	U
-----m/p-Xylene_____	1.0	U
95-47-6-----o-Xylene_____	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW-3

Lab Name: ITS ENVIRONMENTAL

Contract: 98000

Lab Code: INCHVT

Case No.: 98000

SAS No.:

SDG No.: 69431

Matrix: (soil/water) WATER

Lab Sample ID: 358600

Sample wt/vol: 5.000 (g/mL) ML

Lab File ID: 16JUN981548-I051

Level: (low/med) LOW

Date Received: 06/05/98

% Moisture: not dec. _____

Date Analyzed: 06/17/98

GC Column: DB-VRX ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

1634-04-4-----Methyl tert-Butyl Ether	3.4	
71-43-2-----Benzene	16	
108-88-3-----Toluene	7.0	
100-41-4-----Ethylbenzene	6.3	
-----m/p-Xylene	18	
95-47-6-----o-Xylene	4.0	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW-4

Lab Name: ITS ENVIRONMENTAL

Contract: 98000

Lab Code: INCHVT

Case No.: 98000

SAS No.:

SDG No.: 69431

Matrix: (soil/water) WATER

Lab Sample ID: 358601

Sample wt/vol: 5.000 (g/mL) ML

Lab File ID: 16JUN981548-I061

Level: (low/med) LOW

Date Received: 06/05/98

% Moisture: not dec. _____

Date Analyzed: 06/17/98

GC Column: DB-VRX ID: 0.45 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
---------	----------	--	---

1634-04-4-----	Methyl tert-Butyl Ether	24	
71-43-2-----	Benzene	0.50	U
108-88-3-----	Toluene	0.50	U
100-41-4-----	Ethylbenzene	0.50	U
-----	m/p-Xylene	1.0	U
95-47-6-----	o-Xylene	0.50	U

